



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,832	08/22/2001	Nobuo Matsui	Q65917	7288

7590 09/27/2004

SUGHRUE, MION, ZINN, MACPEAK & SEAS  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037

EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
----------	--------------

1733

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/933,832	Applicant(s) MATSUI ET AL.	
	Examiner John L. Goff	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 19-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is in response to the amendment filed on 7/16/04. The previous 35 USC 112 rejections have been overcome. Regarding applicants amendment, it is noted previous claim 1 and new claims 19 and 24 contain a new limitation requiring a cushioning member disposed on one side of the mated portions of the non-magnetic members between the pressing jig and a side of the mated portions. In view of applicants arguments (See in particular page 9) and the interview 8/18/04 it appears applicant intends for this language to exclude a cushioning member on both sides of the mated portions which would overcome the previously applied art. However, the claims are written with open language, i.e. "comprising the steps of", such that the claims do not positively exclude a cushioning member on both sides of the mated portions. Thus, the previous rejections over Sisson (U.S. Patent 2,713,379), Brown (U.S. Patent 2,519,107) and the admitted prior art are maintained. Additionally, new rejections over Sisson, the admitted prior art, and any one of Kiefer (U.S. Patent 4,335,873), Willfond (U.S. Patent 2,705,084), Carmien (U.S. Patent 3,935,055), or Hopwood (U.S. Patent 1,782,615) are made below as if the claims were limited to a single cushioning member on the pressing side of the mated portions. If applicant intends to positively limit the claims to a cushioning member on only one side and overcome Brown it is suggest applicant amend claims 1, 19, and 14 by inserting - - only on a single side of said mated portions of said non-magnetic members - - after "wherein a cushioning member is interposed" and then deleting from the claims "by disposing said cushioning member on one side of said mated portions of said non-magnetic members".

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 20, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as obvious over Sisson (U.S. Patent 2,713,379) in view of Brown (U.S. Patent 2,519,107).

Sisson is directed to bonding two parts using a magnetic jig. Sisson teaches two parts made of non-metallic materials. Sisson teaches mating the two parts via an uncured adhesive layer. Sisson teaches the adhesive layer comprises a thermosetting film, i.e. sheet. Sisson teaches placing the mated portion of the two parts between a pressing jig and a pressure-receiving jig (both jigs made of soft material) such that the adhesive is cured under constant pressure and a bond between the two parts is formed (Figures 2 and 3 and Column 1, lines 15-19 and Column 2, lines 28-31, 44-50, and 68-70 and Column 3, lines 3-9 and 17-22). Sisson is silent as to a specific teaching of attaching cushioning members to the surfaces of the magnetic jig in contact with the two parts. It would have been obvious to one of ordinary skill in the art at

Art Unit: 1733

the time the invention was made to attach cushioning members to the magnetic jig taught by Sisson as it was well known in the art to use cushioning members to prevent the jig from scratching, deforming, or otherwise damaging the parts as shown for example by Brown, it being noted the pressing jig with cushioning member would perform the same as applicants in that it would place bonding surfaces of the parts into uniform contact with the adhesive layer.

Regarding claim 22, Sisson is silent as to the magnet including a handle. It is noted the orientation taught by Sisson differs from that shown by applicant in that the magnet taught by Sisson is arranged below the parts. One of ordinary skill in the art at the time the invention was made would have readily appreciated modifying Sisson such that the magnet is arranged above the parts wherein the magnet would have included a holding member such as for example a handle, as the magnetic force applied would have been the same.

Regarding claims 24 and 25, Sisson does not specifically recite the claimed bonding conditions, i.e. the applied pressure, temperature, cooling rate, etc. However, Sisson is not limited to any particular bonding conditions or bonding any particular parts and the general technique taught by Sisson would have been useful to bond a variety of parts using any number of bonding conditions such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine/optimize the bonding conditions in Sisson as modified by Brown as a function of the quality of bond produced, material worked upon, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Brown is directed to cushioning devices applied to surfaces of clamps, clamping brackets, or the like. Brown teaches the cushioning devices are made from synthetic rubber, Neoprene, etc. Brown further teaches the cushioning devices prevent the surface of the work to which the

Art Unit: 1733

clamps are attached from becoming scratched, deformed, or otherwise damaged (Figures 1-4 and Column 1, lines 1-11 and Column 2, lines 13-19, 32-37, and 44-48 and Column 3, lines 3-11).

5. Claims 19, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sisson and Brown as applied to claims 1, 20, 22, 24, and 25 above, and further in view of the admitted prior art (Specification pages 1 and 2) or alternatively, the admitted prior art in view of Sisson and Brown.

Sisson and Brown as applied above teach all of the limitations in claims 19, 21, and 23 except for a specific teaching of using the magnetic jig to bond two parts made of fiber-reinforced composite material useful for making an aircraft fuselage. However, as noted above Sisson is generally directed to the bonding of any two parts including non-magnetic parts. The admitted prior art is directed to bonding two parts together such as two fiber-reinforced composite materials. The admitted prior art teaches using the bonded fiber-reinforced composite materials to reduce the weight of transport vehicles including aircraft wherein the bonded fiber-reinforced composite materials comprise the main constituent members, i.e. the fuselage/skin/half-cylindrical members, of the vehicles (Specification page 1, lines 8-12). The admitted prior art further teaches the composite material parts are bonded through a method comprising applying an uncured adhesive to the mating portion of the parts, placing the mated parts in a jig wherein the parts are secured within the jig by forming through-holes in the parts and fastening bolts therethrough, curing the adhesive under pressure to form a bond at the mated portion, removing the bonded parts from the jig, and patching the through-holes in the bonded parts with protective material (Specification page 1, lines 26-28 and page 2, lines 4-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the

Art Unit: 1733

magnetic jig taught by Sisson as modified by Brown to bond any two parts such as parts made of fiber-reinforced composite material useful for making an aircraft fuselage (i.e. half-cylindrical skin members) as it was known in the art to bond these parts using a jig as shown by the admitted prior art and only the expected results would be achieved, i.e. bonding without having to form through-holes through the parts. Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the two parts taught by the admitted prior art using a magnetic jig such as the magnetic jig shown for example by Sisson as modified by Brown as it was well known in the art to bond any two parts using a magnetic jig and only the expected results would be achieved, i.e. bonding without having to form through-holes through the materials.

6. Claims 1, 20, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as obvious over Sisson (U.S. Patent 2,713,379) in view of any one of Kiefer (U.S. Patent 4,335,873), Willfond (U.S. Patent 2,705,084), Carmien (U.S. Patent 3,935,055), or Hopwood (U.S. Patent 1,782,615).

Sisson is described above in full detail. Sisson is silent as to a specific teaching of attaching a cushioning member to (only) surfaces of the pressing jig in contact with the two parts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to attach a cushioning member to (only) the surface of the pressing jig in contact with the two parts taught by Sisson as it was well known in the art to use a cushioning member on the surface of the pressing jig on a holding/pressing work holder comprising a pressing jig and a pressure-receiving jig to prevent the pressing jig from scratching, deforming, or otherwise damaging the parts and maintaining a constant pressure on the parts as shown for example by any one of Kiefer, Willfond, Carmien, or Hopwood, it being noted the pressing jig with

cushioning member would perform the same as applicants in that it would place bonding surfaces of the parts into uniform contact with the adhesive layer.

Regarding claim 22, Sisson is silent as to the magnet including a handle. It is noted the orientation taught by Sisson differs from that shown by applicant in that the magnet taught by Sisson is arranged below the parts. One of ordinary skill in the art at the time the invention was made would have readily appreciated modifying Sisson such that the magnet is arranged above the parts wherein the magnet would have included a holding member such as for example a handle, as the magnetic force applied would have been the same.

Regarding claims 24 and 25, Sisson does not specifically recite the claimed bonding conditions, i.e. the applied pressure, temperature, cooling rate, etc. However, Sisson does not suggest nor is Sisson limited to any particular bonding conditions or bonding any particular parts and the general technique taught by Sisson would have been useful to bond a variety of parts using any number of bonding conditions such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine/optimize the bonding conditions in Sisson as modified by any one of Kiefer, Willfond, Carmien, or Hopwood as a function of the quality of bond produced, material worked upon, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Kiefer, Willfond, Carmien, and Hopwood are exemplary of conventional holding/pressing work holders for part(s) comprising a pressing jig and a pressure-receiving jig wherein the pressing jig (only) includes a cushioning member on its surfaces in contact with the part(s) to prevent scratching, deforming, or otherwise damaging the part(s) and maintaining a constant pressure on the part(s) (Figure 1 and Column 1, lines 22-25 and 51-53 of Kiefer and



Figure 1 and Column 2, lines 41-45 of Willfond and Figure 2 and Column 2, lines 56-63 and Column 3, lines 43-48 and Figures 1 and 4 and lines 57-59 of Hopwood).

7. Claims 19, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sisson and any one of Kiefer, Willfond, Carmien, or Hopwood as applied to claims 1, 20, 22, 24, and 25 above, and further in view of the admitted prior art (Specification pages 1 and 2) or alternatively, the admitted prior art in view of Sisson and any one of Kiefer, Willfond, Carmien, or Hopwood.

Sisson and any one of Kiefer, Willfond, Carmien, or Hopwood as applied above teach all of the limitations on claims 19, 21, and 23 except for a specific teaching of using the magnetic jig to bond two parts made of fiber-reinforced composite material useful for making an aircraft fuselage. However, as noted above Sisson is generally directed to the bonding of any two parts including non-magnetic parts. The admitted prior art is described above in full detail. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the magnetic jig taught by Sisson as modified by any one of Kiefer, Willfond, Carmien, or Hopwood to bond any two parts such as parts made of fiber-reinforced composite material useful for making an aircraft fuselage (i.e. half-cylindrical skin members) as it was known in the art to bond these parts using a jig as shown by the admitted prior art and only the expected results would be achieved, i.e. bonding without having to form through-holes through the parts. Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the two parts taught by the admitted prior art using a magnetic jig such as the magnetic jig shown for example by Sisson as modified by any one of Kiefer, Willfond, Carmien, or Hopwood as it was well known in the art to bond any two parts using a

magnetic jig and only the expected results would be achieved, i.e. bonding without having to form through-holes through the materials.

### *Allowable Subject Matter*

8. The following is a statement of reasons for the indication of allowable subject matter:

Claim 24 requires particular pressing ( $0.025 \text{ kg/cm}^2$  to  $0.8 \text{ kg/cm}^2$ ) and heating (100 to  $130^\circ\text{C}$ ) conditions, and as claim 24 is not limited to bonding any two particular materials the claim is rejected above. However, claim 19 requires bonding two half-cylindrical skin members made of a fiber-reinforced composite material for constituting a fuselage of aircraft.

Furthermore, the admitted prior art indicates prior art bonding conditions for these materials of preferably at least  $2 \text{ kg/cm}^2$  and  $150^\circ\text{C}$  (See JP 10-264257 and the translation provided by applicant) such that if claim 19 were amended to incorporate the pressure, temperature, and heat resistance requirements of claim 24, the new claim would be allowable.

### *Response to Arguments*

9. Applicant's arguments with respect to claims 1 and 19-25 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues the prior art of record does not teach a cushioning member only on the pressing jig side of the mated portions. The claims are not commensurate in scope with this argument (See paragraph 1 above). Applicant further argues Sisson does not disclose the pressure requirements of claim 24. It is noted Sisson is not limited to any particular magnet nor is Sisson limited to bonding any two particular parts such that the bonding force/pressure is left to one of ordinary skill in the art (See paragraph 8 in the

Art Unit: 1733

event the bonding conditions are limited to applicants parts). Regarding applicants arguments to the use of the admitted prior art, it is noted these arguments were responded to in the previous office action.

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

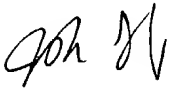
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff



BLAINE COPENHEAVER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700